OCTOBER 2013 ISSUE

PARTICLE POST

COLLIDER-ACCELERATOR DEPARTMENT

PREVIOUS ISSUES
September 2013 GO

Contact: C. Scholl

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A WORD FROM THE:

Administration

Accelerator Div.

ES&F Div.

Acc. R&D Div.

Operations

Arrivals/Departures

Safety Stats

Quote of the Month: "**TO RAISE NEW QUESTIONS, NEW POSSIBILITIES, TO REGARD OLD PROBLEMS FROM A NEW ANGLE, REQUIRES CREATIVE IMAGINATION AND MARKS REAL ADVANCE IN SCIENCE**" - Albert Einstein

NOTE FROM OUR CHAIR: Thomas Roser

Despite a very uncertain federal budget environment start-up activities have been progressing quite well and as of this Monday this falls NSRL run has begun. Beam is being delivered by the EBIS pre-injector after it was completely dismantled over the summer to realign all its elements.

With the partial shutdown of the federal government underway and with no clear end of the shutdown in sight we will give priority to the presently operating facilities NSRL and ATF and to keeping the start-up of RHIC for run-14 and the start of isotope production at BLIP on track. These uncertain times are stressful for everybody. It is now particularly important to stay focussed on the work at hand using good work planning.

DID YOU KNOW??

Check out who received an employee Service Award this year! 2013 Collider-Accelerator Dept. employees who received a Service Award are listed *here*. Last Years Service Awards are listed *here*.

Adam Rusek took over Derek Lowensteins role as NSRL PI! As of October 1st , 2013 Adam is now our NSRL PI.
In anticipation of his retirement from BNL this coming January, Derek Lowenstein has stepped down from his role of NSRL PI.
Derek's association with NASA began in 1989, when NASA asked him to determine what BNL could do in the eventuality that the LBNL Bevalac was turned off.
This occurred in 1993, and the AGS provided the first beams in 1995 for radiobiology research. In 1999, the construction of NSRL began and first operations commenced in 2003. This has been a long and very fruitful effort and Derek will likely remain somewhat involved as he and his wife Elaine will be moving to Houston, TX after his retirement from BNL. I would like to express our deep gratitude to Derek for almost single handedly building up this very successful facility and the fruitful collaboration with NASA. The NSRL facility is the cornerstone for accelerator applications at BNL.

Adam Rusek has been leading the successful operation of NSRL for 10 years and he is clearly well prepared to take over as NSRL PI. I trust that everybody will give him their full support as he takes on this new role.

William Zajc Won 2014 APS Tom W. Bonner Prize!
For his contributions to Relativistic Heavy-Ion Physics, in particular for his leading role in the PHENIX experiment, as well as for his seminal work on identical two-particle density interferometry as an experimental tool.

The Prize is given to recognize and encourage outstanding experimental research in nuclear physics, including the development of a method, technique, or device that significantly contributes in a general way to nuclear physics research.

Check out Steve Bellavias' current Photos! *Moon & Jupiter*

With Unfortunate News..
We say goodbye to an old friend Parke Rohrer who had passed away August 28, 2013.

EVENTS/SEMINARS...

Check out the *BNL Calendar* for upcoming events & Seminars or the *Upcoming Conferences & Workshops* page for workshops and Conferences happening at BNL.

HEALTHFEST2013!! **Did you know it's the month for HEALTHFEST already! Take a look at all the *events* coming up in October and if you haven't yet, *sign up*!**

Oct. 10 - (Bldg 510 SCR|3:00) Particle Physics Seminar, "Constraining Dark Matter-Baryon Scattering with Linear Cosmology" Presented by Kfir Blum (Princeton)

Oct. 15 - (Bldg 510 LSR|3:30) Physics Colloquium "TBA'" - Presented by Gerald Guralnik (Brown U.)

Oct. 17 - (Berkner Hall (AUD)| 4:00) Brookhaven Women In Science (BWIS) Event - "The Truth and Beauty in Quasicrystals", Presented by Marjorie Senechal (Smith College)

Oct. 23 - (Berkner Hall (AUD) | 4:00) BSA Distinguished Lecture, "Paradigms for a 21st Century University", Presented by David Keyes (KAUST)

Oct. 24 - (Bldg 510 SCR | 3:00) Particle Physics Seminar, "Modeling Neutrino Quasielastic and Inelastic Scattering Using Electron Scattering Data", Presented by Arie Bodek (U. of Rochester)

Oct. 30 - (Bldg. 510 SCR | 2:00) High Energy Physics & RIKEN Theory Seminar, "TBA" Presented by Chris Monahan (College of William & Mary)

Nov. 1 - (Bldg 510 SCR | 2:00) Particle Physics Seminar, "TBA", Presented by Nuno Viegas Guerreiro Leonardo (CERN)

IN OTHER NEWS...

Fusion Milestone Passed at US Lab! ~ According to the BBC, the National Ignition Facility at Lawrence Livermore National Laboratory has fired its 192 lasers at a tiny target of deuterium and tritium, which has, for the first time ever, released more energy than was put into it. That could constitute evidence of nuclear fusion. *Read more*..

Cyborg Cockroach Sparks Ethics Debate ~ *RoboRoach #12 and its brethren are billed as a do-it-yourself neuroscience experiment that allows students to create their own "cyborg" insects.... Read more*

CERN's CLOUD Exp. Shines New Light on Climate Change ~ *Read about it*.. How do aerosols - tiny solid or liquid particles suspended in the air - form in the atmosphere, and which gases are responsible?

WHAT'S GOING ON IN OUR NEIGHBORHOOD?

Interested in Cycling? Why don't join in on the .. *Piermount Bike Festival*

Interested in Running or Walking? Check out the lirunning August Calendar for the following events: Southampton Youth Services 10th Ann. 5k; Inwood 5k; Brick 26 5k & Obsticle Race; Freaky 5k; Seatuck Owl Prowl 5k Walk/Run; Clock tower Trot 4k; The Run dead 5k; Run for the warriors 5k, 10k and 1 mile. There are some fun Mud run's coming up as well, please see *Tomcat* or *Urbanathlon*.

Check out Pictures from the Survival Race Sept. 7! S. Bugros (& his son Noah), A. Lamberti, M. Jacobellis (& grandson Andrew) and N. Day all took part in the Survival Race, *check out the pictures*!

For the Kids: Disney on Ice & WWE RAW (November) @ The Nassau Coliseum.

Stony Brook Events:
1st Annual LEGO Building Contest: Sept 21~Oct 20 (9~5)
23rd Annual Scarecrow Competition ~ Sept. 27~Oct 31 (3~5)
Walk for Beauty 2013: Oct 20 (8:30am)
LEGO Building Blocks Workshop for Families ~ Oct 26 (2~4)
23rd Annual Halloween Festival ~ Oct 31 (2~5)
Navigate Your Healthcare: "Ins & Outs of Obama Care" ~ Nov. 13 (6:30~8:30)

Nassau Coliseum ~
Upcoming shows: Jay Z Magna Carter Holy Grail Tour, Trans Siberian Orchestra &

DAY AT THE VINEYARDS...

Macari Vineyard ~ [MATTITUCK] No upcoming events at vineyard.

Duckwalk North ~ [SOUTHOLD] No Events Posted
Duckwalk South ~ [WATER MILL] No Events Posted

Castello di Borghese Vineyard & Winery ~ [CUTCHOGUE] ** Vineyard Tours & Wine Tastings Every Thursday & Sunday @1pm & FREE Jazz Every Saturday (2~4) with Marguerite Volonts**
Oct. 17 ~ Harvest Raffle for the Benefit Our Lady of Mercy Regional School (6~7:30)
Oct. 20 ~ Vinyasa & Vines (11~12:30) Athletica Yoga Class

Jamesport Vineyards ~ Live Music and Oyster Bar open every weekend * October: (5) Chris Hurley Trio; (6) Bob Bruey; (12) Ed Travers Band; (13) Jon Divello Duo; (19) Gene Casey Trio; (20) Rob Europe.

Martha Clara Vineyards - [RIVERHEAD] OCTOBER ~ 12 (2~6) Keith Maguire Acoustic Duo; 13 (2~6) Henry Haid only in America Entertainment; 14 (1~5) The Two Dons Electric Guitar Duo \ Vines & Canines Edu. Vineyard Walk; 19 (12~4) East End Trio; 20 (1~4) Eastbound Freight Bluegrass Band; 26 (1~5)Astrograss Trio; ~ NOVEMBER~ 2 (1~5) East End Trio; 3 (12~3) JJ Jazzmataz; 9 (12~3) The Jeff Levine Trio; 10 (12~3) Vanessa Trouble; 11 (1~4) Veteran's Day Live Music

Palmer Vineyards - [RIVERHEAD] *Live Music every weekend*, *Gourmet Food Trucks Every Saturday & Sunday* Every Sunday Yoga in the Vineyard (11am) $25 pp and Mimosa Bar * Hayrides Through the Vineyard every Sat & Sun*

NOTE FROM OUR ADMINISTRATION: Stephanie LaMontagne-McKeon

September 30th marked the end fiscal year 2013. Both the RHIC and NSRL programs carried forward sufficient funds to support operations under a Continuing Resolution. Unfortunately, the opening weeks of fiscal year 2014 offer unprecedented levels of uncertainty. Congress has not passed the customary Continuing Resolution and thus BNL has not received budget guidance or funding from DOE. BNL management at all levels is actively planning for the worst case scenarios while remaining hopeful that they will not come to pass. In the meantime, it is important that each of us remain focused, limit cost for efforts essential to preparation for RHIC Run 14, NSRL Run 13C, ATF Operations and Isotope Production. All other expense should be deferred.

NOTE FROM OUR ACCELERATOR DIVISION: Wolfram Fischer

While we are awaiting the resolution of the budget impasse in Washington, the NSRL Run started on 7 October 2013, and will continue until Thanksgiving. After realigning the EBIS RFQ and Linac, and with the new low-level RF in the Booster we are expecting better performance, which will be especially important in the upcoming RHIC run.

In preparation for the RHIC Run, lattice decisions have to be made. Guillaume Robert-Demolzaize, the Run-14 Run Coordinator, is preparing the information to make these decisions. Also in preparation for the run the STAR magnet was raised by 6.9 mm to allow for a straight orbit in the experiment. This was not possible any more with the new and smaller beam pipe installed last year. We will have an Accelerator Physics Experiment Workshop at the beginning of December. Mei Bai will be organizing the workshop.

We will also have a DOE review of the Low-Energy RHIC electron Cooling (LEReC) project in January 2014. This is the largest RHIC upgrade in the foreseeable future aimed at increasing the Au+Au luminosity at and below the nominal injection energy by an order of magnitude. We plan to run for physics with this upgrade in 2018.

NOTE FROM OUR EXPERIMENTAL SUPPORT & FACILITIES DIVISION: Phil Pile

Our shutdown activities continue unabated. The STAR detector: After successfully completing the Inner Detector Support (IDS) deflection tests, this carbon structure that supports the vertex detectors HFT and IST as well as the FGT was installed inside the TPC. The upgraded IST silicon detector was then installed and tested and followed by the beryllium beam pipe. Last week the STAR detector was moved from the assembly building into the IR and repositioned on the beam line with particular attention paid for the vertical positioning to assure it is centered. C-AD completed the STAR crane runway support upgrade and a conceptual design of the STAR internal gold target. This will be subjected to an engineering review prior to manufacture and installation for the upcoming run.

The PHENIX detector continues its shutdown activities. To date they have completed the replacement of the East Drift Chamber window and tested it for leaks, carried out some repairs to the muon tracking chambers and maintenance of the front south RPC chamber, upgraded the South RPC gas flow meters system. They are preparing for the installation a 1/2 MPC-EX S detector for an engineering run, and are in the process of replacing the winch system for the West side window washer. Work on the silicon vertex detectors is proceeding on schedule elsewhere in the Physics and Chemistry departments. The VTX strip and pixel detectors as well as the FVTX detectors will be assembled and surveyed elsewhere before installing them in PHENIX starting in early November with a target date of completion before Thanksgiving. A significant effort is being expended by C-AD to modify the South side shielding around the DX magnet in preparation for pA running next year. The North side will be tended to during next year's summer shutdown.

Preparations are underway to augment the BLIP target tank shielding. The BLIP group has started to look the QA issues that were raised in preparation for and during the DraxImage audit with an eye to getting a head start on the remediation efforts. We are weighing a couple of options for shielding building 801 BLIP Heppa filters before start of construction.

The EBIS and the booster underwent commissioning last week in preparation for the NSRL run which started on October 7 with iron beams and will continue through November 15. Following that an NSRL (NRO) run is planned for November 18 through November 22nd.

NOTE FROM ACCELERATOR R&D DIVISION: Ilan Ben-Zvi

ERL'13 Workshop: The workshop was held at the Budker Institute of Nuclear Physics in Novosibirsk. Our department was well represented, delivering 7 talks and 2 posters. BNL was selected as a host of the next ERL Workshop, which will take place in 2015.

SRF2013 Conference: The conference was held in Paris. The conference is growing steadily, reaching almost 400 registered participants this year. It is becoming more and more important as many new accelerator projects are based on SRF technology. At this conference quite a few new ideas were floated around, there were lively discussions and new developments in SRF technology were presented. Our SRF group has presented three invited talks, one tutorial, and a number of posters. The next SRF conference will be organized by TRIUMF, Canada in 2015.

The Coherent electron Cooling experiment: Both 112 MHz and 500 MHz RF systems had been moved into RHIC tunnel at IP2. The infrastructure, including the 500 MHz transmission line, the 4 K compressor and cable trays moving forward. Laser for 112 MHz reached specifications.

The Critical Design Review of the 704 MHz cryo-module was completed at Niowave and production has started, The BNL-3-2 704 MHz cavity from Niowave had been delivered for vertical tests at BNL. We have now two BNL3 niobium cavities to test in the coming months. Frequency tuners on both 500 MHz bunching cavities were successfully re-aligned.

The Critical Design Review of CeC's helical wiggler system took place in Novosibirsk, and went well. The production of the first wiggler has started.

The LARP project in CAD continues with the 2nd vertical testing of the Proof of Principle crab cavity. The cavity is now in the clean room for coupler installation. The final version of the cavity design for the SPS test with beam is at its final stage. In the last week of September, 2 invited talks and 3 posters were presented at the SRF13 conference referring to this crab cavity project for LHC upgrade. The topic has attracted interests of the scientists around the world.

The ATF hosted two user experiments In September 2013:
AE56 – High-resolution Diagnostic Based on Fiber Optics (Radiabeam)
AE57 – Corrugated Plate De-Chirper (Radiabeam)
Both experiments were productive and the experiment is making good progress towards its successful completion.
Two new experiments proposed by industry users and supported by SBIR Phase 2 grants are being initiated.
ATF staff is preparing for two important facility reviews in October: Advisory panel on 100 TW CO2 laser upgrade and the ATF Upgrade Proposal presentation to DOE.
The MICE management team has selected the so-called partial return yoke scheme developed by Holger Witted of the Muon Acceleration Group and Steve Plate of the Magnet Division to be the baseline solution to the magnetic shielding requirements for the MICE experiment being mounted at Rutherford Appleton Laboratory (RAL). Fabrication and installation is scheduled for this fiscal year (FY14).

NOTE FROM OPERATIONS: Paul Sampson

Shutdown '13 continues in AGS and RHIC, while startup for NSRL in the Booster commenced late in September. Progress continues on major projects and yearly maintenance items.

In RHIC, installation of the e-lens continues to progress well. Cool-down and field mapping of yellow SC solenoid gap was successfully completed last month and the focus has returned to final installation. Tests and field mapping for the Blue gap is expected to begin in a few weeks. Work on other projects including Stochastic Cooling, CeC and 56 MHz RF continue to show progress. Contractors for tree trimming and grounds have arrived and are making great strides addressing issues at RHIC and throughout the CAD complex. Repair, replacement and maintenance on the Air Conditioning systems continues with hopes of a further reduction in issues next run.

Startup in the Booster began in late September. Commissioning of the new low level RF system was successful, as was experimental setup with beam. User experiments began on schedule and are presently running well. Also in the pre-injectors, work on the laser ion source, HEBT vacuum, the Laser Profile Monitor and LINAC maintenance continues.

In the AGS, implementation of modifications to the D5 Horizontal eIPM continues. Design and fabrication of the new D15 eIPM is also moving foreword. Maintenance to systems such as the C15 polarimeter and A20 cold snake is ongoing.

The installation of the new Access Controls System for LINAC continues. Completion and commissioning will commence later in the shutdown. The system is expected to be ready before the next BLIP run in December.

Other CAD area infrastructure systems repair, maintenance and upgrades are continuing. The CAD CATV system display includes daily updates including testing, outages and important dates. This information can also be seen on the web at RHIC Broadcast.

To view a list of the approved work for maintenance days or the shutdown, go the Job Request System and select the appropriate date. This link is behind the firewall and requires privileges to view.

For schedule updates see: This Week, which can be viewed by all.

ARRIVALS: Welcome!

Heather Savage - Student Assistant - Joined our dept. Sep. 16 , 2013. She is working with Carl Schultheiss in the Collider Electrical Power Supplies Group.

Carlos Marques - Student Assistant - Joined our dept. Sept. 16, 2013. He is working with Sergey Belomestnykh in the SRF Group.

Kevin Mandracchia - Joined our Dept. Oct. 7, 2013. He is working with Mike Bannon in the Booster/AGS Ring P. S. Systems Group.

Dillon Thomas- Joined our Dept. Oct. 7, 2013. He is working with Peter Ingrassia in the Machine Operations Group.

Henry Lovelace- Joining our Dept. Oct. 14, 2013. He will be working with Peter Ingrassia in the Machine Operations Group.

DEPARTURES: Farewell, you will surely be missed..

Reid Smith- (Machine Operations) - last day was Friday, September 30, 2013 - Transferred to Photon Sciences dept..

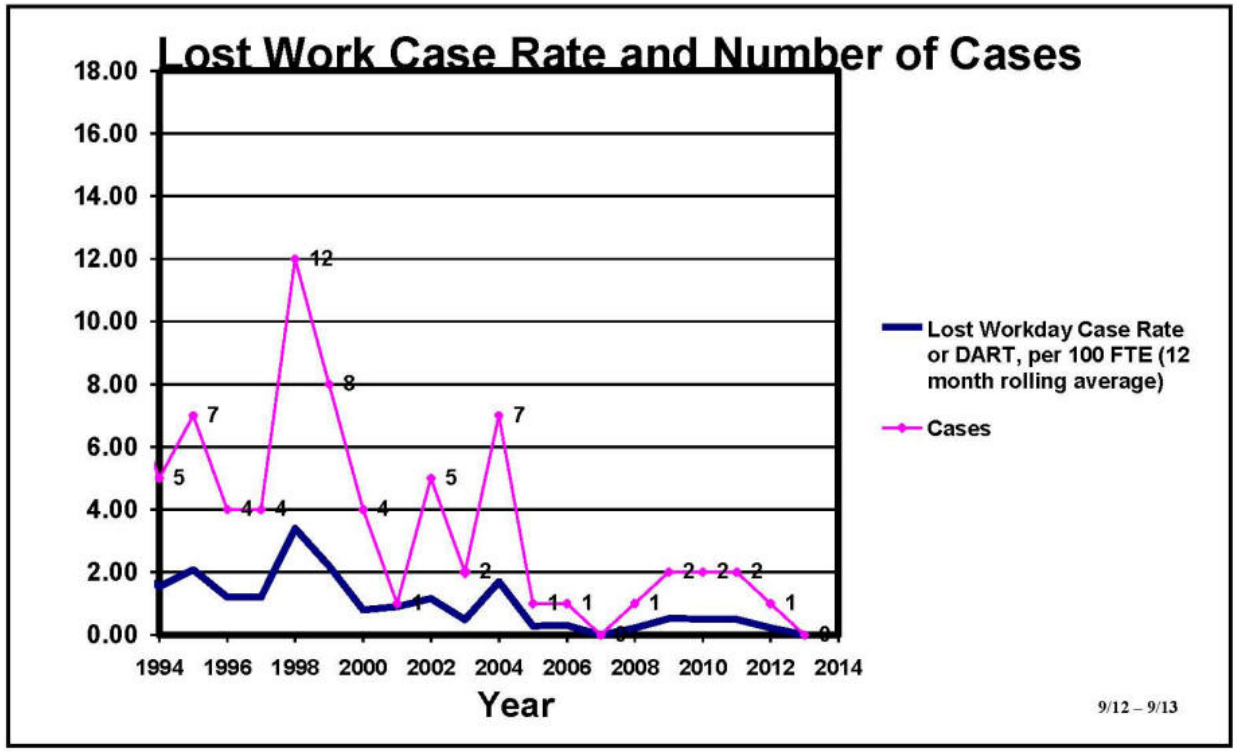
Jason Farrell - (Design & Documentation) - Last Day was October 7, 2013 - Transferring to Physics Dept..

Robert Todd - (Vacuum Systems) - Last Day is Monday, November 4, 2013 - Transferring to Photon Sciences dept..

Guest Notices:

Justin Owens - Guest Jr. Research Associate - Has been extended to August 25, 2014.

SAFETY STATS: Peter Cirnigliaro



C-AD Occupational Injury Statistics

	For Year 2012	For Year* 2013
First Aid Cases	5	2
Recordable Cases	3	1
Lost Work Cases	0	0

* Calendar Year through 9/13

PHOTOS BY: STEVE BELLAVIA

Steve was out around noon Sept. 30th and was able to find Jupiter, in broad daylight.

"It was about 25 degrees to the West of the moon and a little down. (I used the moon to focus). Only took a few minutes with my little 80mm refractor. I could see the North and South Equatorial belts. Not a great photo of it, but it is attached. Then, to keep the daytime astronomy theme going I got quarter phase Venus, and then the crescent moon, and of course the Sun (which is very inactive these past days)."